

DEC 16 1992

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Please note change of address:
P.O. Box 1760
205 Main Street
Brattleboro, VT 05302
~~214 Main Street
Brattleboro, VT 05301~~

(802) 254-3677 (24 hrs.)
(802) 254-7630 (FAX)

December 15, 1992

Lynda Wedderspoon
VT ANR/DEC
HMMD
103 South Main St/West Building
Waterbury, VT 05671-0404

Re: Initial Site Investigation Report for Vermont Liquor Store, Bennington, VT

Dear Ms. Wedderspoon:

Please find enclosed the above-referenced report.

Should you have any questions please call me at 1-800-359-3677.

Sincerely,

Kirsten Jeppesen

Kirsten Jeppesen *on*
Environmental Technician

Enclosure

cc: Betty Riley

KHJ/dan

\\239\LYNDA.LET

Branch Office:
25 Pinney Street, Ellington, CT 06029 (203) 875-2110 (24 hrs.)
Fax: (203) 875-8587 (24 hrs.)

Printed on 100% recycled paper.

DEC 16 1992

**Initial Site Investigation
Vermont Liquor Store
Depot Road
Bennington, Vermont**

Prepared for

Betty Riley
Depot Properties
Mountain View Drive
Shaftsbury, Vermont 05262

December 7, 1992

Executive Summary

A 500 gallon underground storage tank (UST) used for #2 oil, was removed from the Vermont Liquor Store site on April 6, 1992. Using a photo ionization device (PID) for organic volatiles detection, soils in the excavated pit were screened and found to be contaminated. These contaminated soils were excavated and removed from the site to an off site location where they were stockpiled and polyencapsulated. The extent of soil contamination was determined by screening with a PID during excavation. Three monitor wells were drilled, developed, and sampled to determine extent of groundwater contamination. Laboratory results show that all monitor wells contained non-detectable levels of BTEX and only one well contained slight TPH contamination. Site evaluation, sampling results, conclusions, and recommendations are presented in this report.

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I. Site Overview

A. Setting and Layout

Vermont Liquor Store (VLS) is located off Depot Road near the Main Street intersection, in Bennington, Vermont (Site Location Map, Appendix A). The property is bordered by Paul's Fish Fry to the south, the Walloomsac River to the north, Fay's Drug Store and Depot Road to the east, and Kirkside Motor Lodge and Alcaro Car Dealership parking lot to the west (Site Sketch Map, Appendix B).

VLS shares a shopping plaza type building with Fay's Drug Store. The area around the building to the south and the west is paved and used as parking for the store (Site Photographs, Appendix C).

The underground storage tank (UST) removed from the site was located to the southwest of the building (Tank Pull Map, Appendix D).

B. Site History

Previous to the construction of the Fay's Drugs and Vermont Liquor Store building, the site was occupied by a field and a pond/wetland type area at the intersection of Dewey Brook and the Walloomsac River. According to Betty Riley, current joint owner of the property, the VLS building was built in the early 60's and Dewey Brook was then diverted to a culvert which presently flows under the parking lot to the Walloomsac River (Sketch Map, Appendix B). The former owners of the property were William and Mildred Dailey, parents of the present owners Betty Riley and Patricia Cook.

C. Initial Sampling and Screening

One, 500 gallon UST was excavated and removed on April 6, 1992 by Steve Cutting Excavation. At the time of removal the tank was inspected by Paul Miller of TRI-S Environmental Consulting (TEC) and found to be heavily rusted throughout with no visible signs of leakage. On the same day soils in the tank excavation pit were screened by TEC, using a PID, and found to be contaminated. Approximately 12 yards of contaminated soils were excavated, transported to an off-site location, polyencapsulated and stockpiled. The excavation pit was then backfilled with clean gravel. The off-site location is thoroughly described in the comments section of the tank pull forms prepared for the site.

On September 9, 1992 three monitor wells were installed at the site by TEC and T&K Drilling (Monitor Well Installation Logs, Appendix E). These wells were developed and surveyed by TEC personnel on September 15, 1992. Groundwater elevations of each well were measured before both surveying and sampling episodes. Groundwater elevations were then calculated and are presented in the data summary table below as groundwater potentiometric readings. A groundwater potentiometric map for 9/15/92 was developed from these readings to determine the direction of groundwater flow and is included as Appendix F. A groundwater potentiometric map was not constructed for 9/28/92 since groundwater elevations are similar to those of 9/15/92.

*Groundwater Potentiometric Chart
Vermont Liquor Store*

Wells	SLS-1	SLS-2	SLS-3
Top of PVC	99.50	98.97	98.17
9/15/92	91.04	90.89	90.37
9/28/92	91.14	90.89	90.41
All readings measured in feet from an arbitrary datum point			

According to the map, groundwater at the site flows in a northwesterly direction towards the Walloomsac River. The exact groundwater direction is difficult to determine due to the small area covered by the three monitoring wells and the existence of the underground culvert. The underground culvert intersects groundwater flow at the site and contains "weep holes" which allow the draining of groundwater into the culvert.

The monitor wells were purged and sampled by TEC on September 28, 1992. Locations of the sampling points are shown on the map in Appendix B. Samples were collected and preserved in accordance with State of Vermont sampling protocol. Samples were analyzed by EPA Method 8020 for purgeable aromatics and Total Petroleum Hydrocarbons (TPH). Analysis of the samples was performed by Matrix Analytical Laboratories located in Hopkinton Massachusetts. Results are summarized in the Groundwater Sampling Results table (page 3). Full laboratory reports are included as Appendix G.

Groundwater Sampling Results 9/28/92 for Vermont Liquor Store

Compound	SLS-1	SLS-2	SLS-3	Field Blank	Dup of 2	Trip Blank
Benzene	MD	ND	ND	ND	ND	ND
Toluene	ND	ND	ND	ND	ND	ND
Ethylbenzene	ND	ND	ND	ND	ND	ND
Xylenes	ND	ND	ND	ND	ND	ND
TPH		<0.1	0.2	<0.1	<0.1	<0.1
Results measured in micrograms per liter (ppb)				TPH measured in parts per million		
TPH = Total Petroleum Hydrocarbons				ND = Not Detectable		
Blank = No data, Not analyzed				Dup of 2 = Duplicate of SLS-2		

D. Initial Risk Evaluation

Based on the laboratory analysis of water samples collected from the Vermont Liquor Store site, contamination levels in the groundwater were found to be non-detectable for BTEX as shown in the Sampling Results data summary table. All buildings within a half mile radius of the site are serviced by the town water system. The other potential receptors in the immediate area are Dewey Brook and the Walloomsac River. It appears that these receptors are no longer being impacted by the contamination at the site.

The bulk of contaminated soil at the site during the UST removal was found to be towards the southwest and west of the UST (in between the UST and the culvert). A preferred flow of contamination in this direction may have occurred due to the weep holes located in the side of the of the culvert.

The building does not intersect the groundwater surface (depth of approximately 8 feet) and therefore the potential of vapors moving into the building is minimized.

Since accessibility behind the building and downgradient of the UST is limited, installation of a monitoring well to determine possible contamination within that area would be difficult.

II. Conclusions

TEC makes the following conclusions:

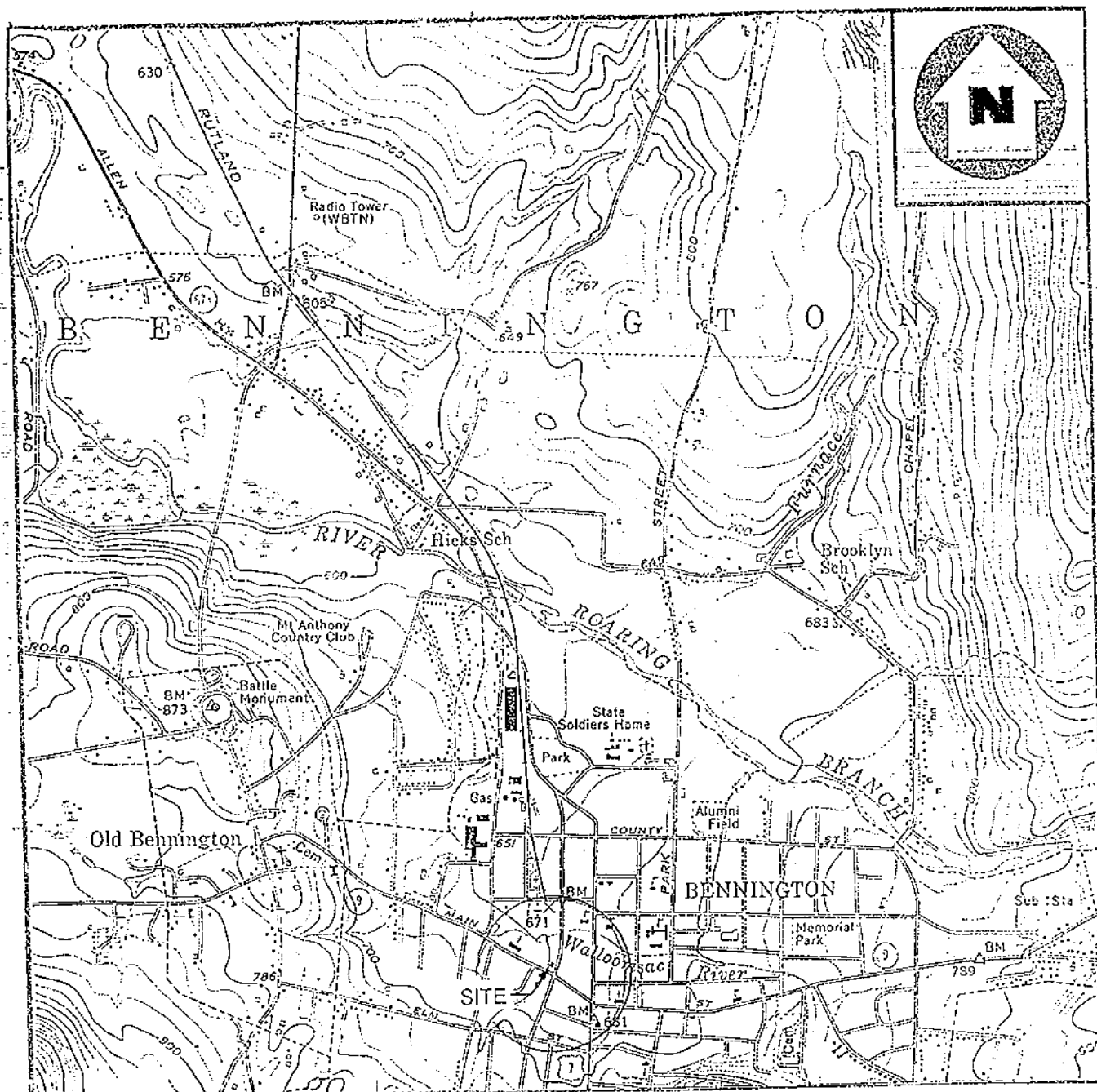
- Soil screening with a PID during UST excavation and removal showed detectable levels of organic vapors.
- The bulk of contaminated soil was removed and stockpiled at the time of UST excavation.
- Soil screening with a PID during monitor well installation showed non-detectable levels of organic vapors.
- Upon sampling and analysis, BTEX contamination was not found in monitor wells SLS-1, SLS-2, or SLS-3.
- Monitor well SLS-3 showed 0.2 ppm TPH

III. Recommendations

TEC recommends additional sampling of the site in the spring to further confirm the absence of contamination. Sampling will take place in the spring when the water table is higher and may saturate the former UST area. The site should be deemed closed when the two consecutive sets of samples confirm that all contaminant levels remain below the State of Vermont Drinking Water Standards.

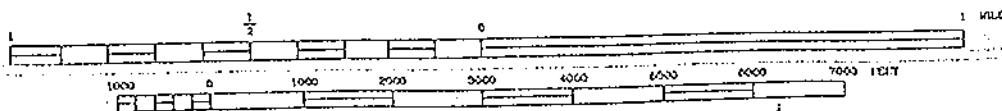
Stockpiled soils from the site have been polyencapsulated and will be allowed to undergo natural bio-degradation over time. Periodic screening (every 6 months) of the soils with a PID will be conducted and results sent to the Sites Management Section of the Vermont DEC. Once the contaminants in the soils have reached acceptable levels, the soils will be used as fill on the site where they have been stockpiled (property of Betty and Brud Riley).

A. Site Location Map



BASE MAP IS A PORTION OF THE FOLLOWING 7.5' U.S.G.S. QUADRANGLE(S):

BENNINGTON, VERMONT



LOCATION MAP

Vermont State Liquor Store
Depot Road
Bennington, Vermont

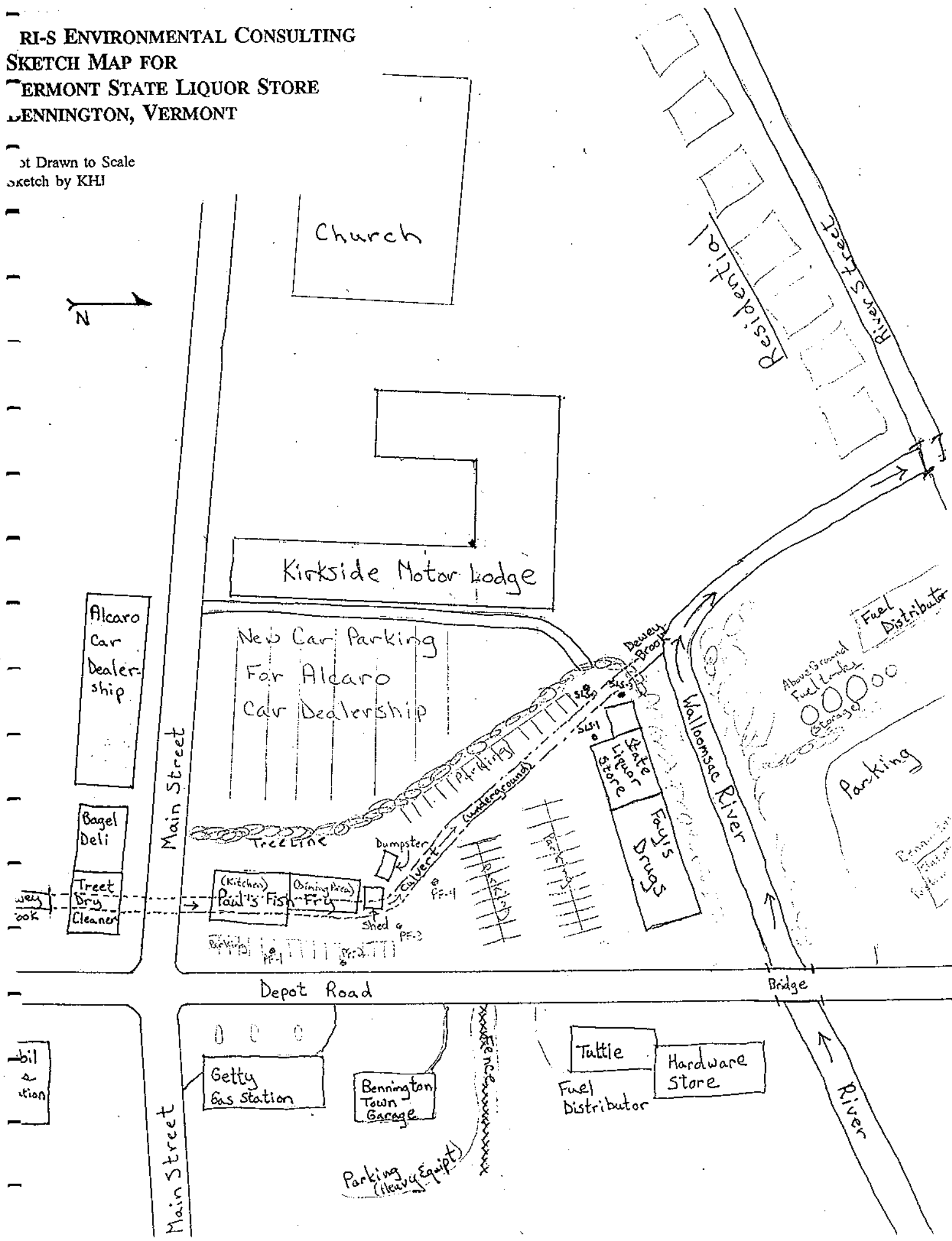
TEC **TRI-S**
ENVIRONMENTAL
CONSULTING

FIGURE 1

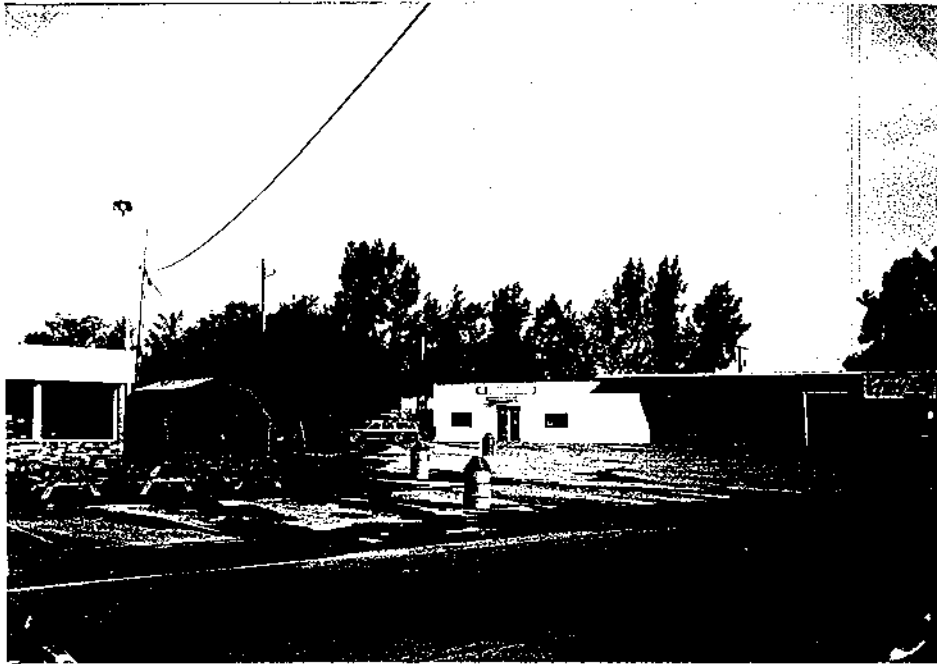
B. Site Sketch Map

RI-S ENVIRONMENTAL CONSULTING
SKETCH MAP FOR
VERMONT STATE LIQUOR STORE
BENNINGTON, VERMONT

Not Drawn to Scale
Sketch by KHI



C. Site Photographs



1. Vermont State Liquor Store as seen from Depot Road looking northwest



2. Drilling Monitor Well SLS-1 west of the store front



3. Drilling Monitoring Well SLS-3 to the west of the building

D. Tank Pull Map

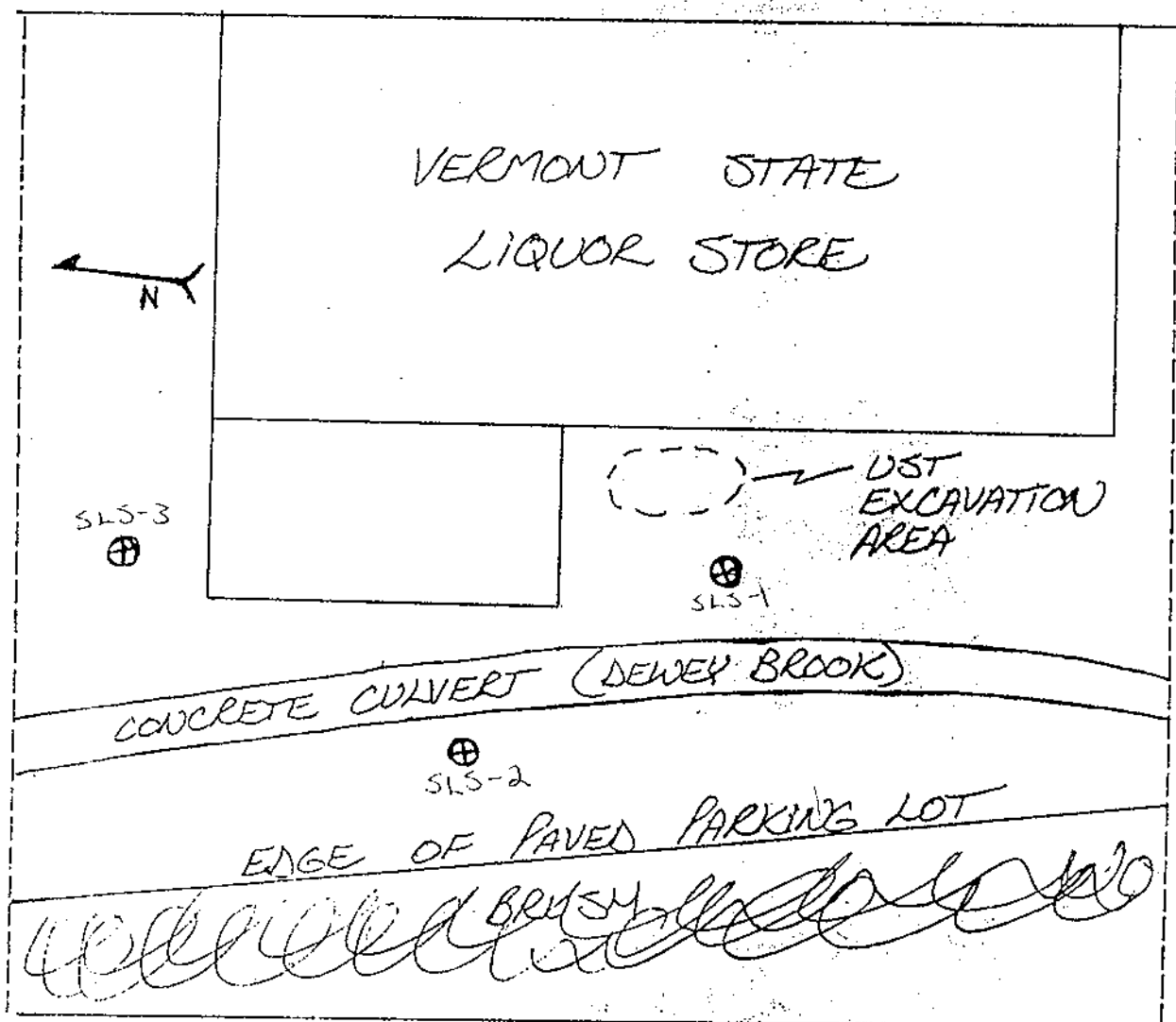
VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION
UNDERGROUND STORAGE TANK PROGRAM
SITE MAP

RECOMMENDED SCALE - 1" = 50 feet (but not smaller than 1" = 100 feet)

MAP DRAWN BY: *PAUL D.G. MILLER*

BUSINESS NAME WHERE TANK(S) LOCATED: *VERMONT STATE LIQUOR STORE*

Show location of all tanks and property boundary; distance to permanent structures; monitoring wells; water wells within 500 foot radius; storm; sewer and water lines; sample points; areas of contamination and other pertinent site information. Indicate North arrow and major street names or route number.



SCALE 1" = 30'

White-DEC File Copy

Yellow-DEC File Copy

Pink-Owner Copy

⊕ = PROPOSED WELL LOCATIONS

E. Monitoring Well Installation Logs

TRI-S ENVIRONMENTAL CONSULTING

SOIL BORING / MONITORING WELL LOG

WELL NUMBER SLS-1

SHEET No. 1 of 3

CLIENT Betty Riley
 PROJECT NAME Vermont State Liquor Store
 PROJECT # 239
 WELL LOCATION see enclosed Maps
 DRILLING CO. T+K Drilling
 LOG BY Paul Miller

DATE DRILLED 9/9/92
 WELL TOP ELEV. _____
 PVC ELEV. 99.50
 GROUND ELEV. _____
 DRILLER Alan Tommila

DRILLING METHOD HSA
 TOTAL DEPTH OF WELL 10'
 SCREEN DIA. 2" LENGTH 7'
 RISER DIA. 2" LENGTH 3'
 SLOT SIZE 10

DEPTH HYP	SAMPLE				FIELD CLASSIFICATION AND REMARKS	FIELD TESTING	EQUIPMENT INSTALLED	
	No.	PEN/ REC	DEPTH FT	BLOWS/6"			Riser	Screen
					Brown, silt and Fine Gravel, Some Fine to coarse sand and Medium Gravel	ND	Cement or Grade Bentonite	
5	1	24"/6"	5-7'	19, 6 4, 2	Brown, silt		Grade 1 Silica Sand Pack	
	2	24"/8"	8-10'	10, 12 >30	Gray, silt			
10					Refusal at 10' (Gray Cobbles)			
					End of Boring			
15								
20								
25								
30								
35								
40								

NOTES:

1. FIELD TESTING PERFORMED USING A THERMO ENVIRONMENTAL INSTRUMENTS INC. ORGANIC VAPOR METER, IOVM, MODEL 580B. METER RESPONSE IN PPM.
2. ND INDICATES NON-DETECTABLE CONTAMINANT CONCENTRATIONS ON OVM.
3. SAMPLES COLLECTED USING A SPLIT SPOON SAMPLER UNLESS OTHERWISE INDICATED.
4. SPLIT SPOON SAMPLER HAS A 2" DIAMETER AND IS DRIVEN USING A 140 LB. HAMMER FALLING 30 INCHES.
5. HSA = HOLLOW STEM AUGER
 AR = AIR ROTARY

TRI-S ENVIRONMENTAL CONSULTING

SOIL BORING / MONITORING WELL LOG

WELL NUMBER SLS-2

SHEET No. 2 of 3

CLIENT <u>Betty Riley</u>	DATE DRILLED <u>9/9/92</u>	DRILLING METHOD <u>HSA</u>
PROJECT NAME <u>Vermont State Liquor Store</u>	WELL TOP ELEV. _____	TOTAL DEPTH OF WELL <u>13'</u>
PROJECT # <u>239</u>	PVC ELEV. <u>98.97</u>	SCREEN DIA. <u>2"</u> LENGTH <u>10'</u>
WELL LOCATION <u>see enclosed Maps</u>	GROUND ELEV. _____	RISER DIA. <u>2"</u> LENGTH <u>3'</u>
DRILLING CO. <u>T+K Drilling</u>	DRILLER <u>Alan Tommila</u>	SLOT SIZE <u>10</u>
LOG BY <u>Paul Miller</u>		

DEPTH H/FT	SAMPLE				FIELD CLASSIFICATION AND REMARKS	FIELD TESTING	EQUIPMENT INSTALLED
	No.	PEN/ REC.	DEPTH FT	BLOWS/6"			
					Brown/Tan, Medium to coarse Gravel and Cobbles Some Fine to coarse Sand and Silt	ND	Cement to Grade Bentonite
5	3	24"/4"	5-7'	15, 12 12, 16	Brown, Coarse Sand, Some Fine to Medium Gravel	ND	Grade I Silica Sand Pack
10	4	24"/8"	10-12'	5, 5 8, 8			
15					End of Boring		
20							
25							
30							
35							
40							

NOTES:

1. FIELD TESTING PERFORMED USING A THERMO ENVIRONMENTAL INSTRUMENTS INC. ORGANIC VAPOR METER (OVMI) MODEL 5808L METER RESPONSE IN PPM.
2. ND INDICATES NON-DETECTABLE CONTAMINANT CONCENTRATIONS ON OVM.
3. SAMPLES COLLECTED USING A SPLIT SPOON SAMPLER UNLESS OTHERWISE INDICATED.
4. SPLIT SPOON SAMPLER HAS A 2" DIAMETER AND IS DRIVEN USING A 140 LB HAMMER FALLING 30 INCHES.
5. HSA = HOLLOW STEM AUGER
AR = AIR ROTARY

TRI-S ENVIRONMENTAL CONSULTING

SOIL BORING / MONITORING WELL LOG

WELL NUMBER SL3-3

SHEET No. 3 of 3

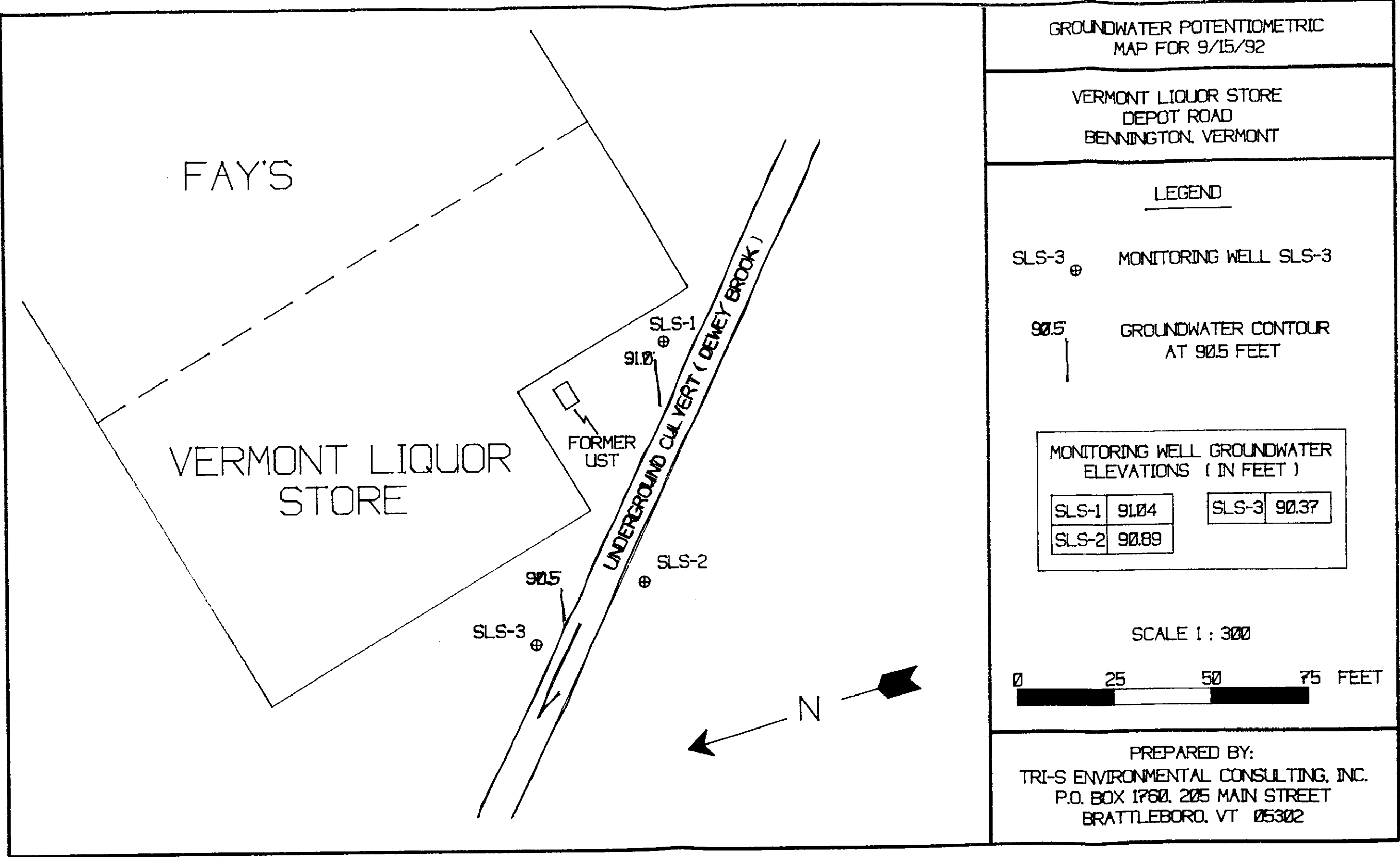
CLIENT <u>Betty Riley</u>	DATE DRILLED <u>9/9/92</u>	DRILLING METHOD <u>HSA</u>
PROJECT NAME <u>Vermont State Liquor Store</u>	WELL TOP ELEV. _____	TOTAL DEPTH OF WELL <u>14'</u>
PROJECT # <u>239</u>	PVC ELEV. <u>98.17</u>	SCREEN DIA. <u>2"</u> LENGTH <u>10'</u>
WELL LOCATION <u>See enclosed Maps</u>	GROUND ELEV. _____	RISER DIA. <u>2"</u> LENGTH <u>4'</u>
DRILLING CO. <u>T+K Drilling</u>	DRILLER <u>Alan Tammila</u>	SLOT SIZE <u>10</u>
LOG BY <u>Paul Miller</u>		

H/L	SAMPLE				FIELD CLASSIFICATION AND REMARKS	FIELD TESTING	EQUIPMENT INSTALLED	
	No.	PEN/REC.	DEPTH (FT.)	BLOWS/5'			Riser	Screen
					Brown/Tan, Medium to Coarse Gravel and cobbles, some Fine to Coarse Sand and silt			Cement to Grade
								Bentonite
								Grade 1
								Silica
								sand
5	5	24 1/6"	5-7'	25, 14 7, 4				Pack
10	6	24 1/5"	10-12'	4, 10 29, >30	Gray/Brown, Layered Silt			
15					Refusal at 14'	End of Boring		
20								
25								
30								
35								
40								

NOTES:

1. FIELD TESTING PERFORMED USING A THERMO ENVIRONMENTAL INSTRUMENTS INC. ORGANIC VAPOR METER (OVMI) MODEL 5808. METER RESPONSE IN PPM.
2. ND INDICATES NON-DETECTABLE CONTAMINANT CONCENTRATIONS ON OVM.
3. SAMPLES COLLECTED USING A SPLIT SPOON SAMPLER UNLESS OTHERWISE INDICATED.
4. SPLIT SPOON SAMPLER HAS A 2" DIAMETER AND IS DRIVEN USING A 140 LB. HAMMER FALLING 30 INCHES.
5. HSA = HOLLOW STEM AUGER
AR = AIR ROTARY

F. Groundwater Potentiometric



G. Laboratory Analysis Reports



ANALYTICAL DATA
SUMMARY

Report Date: 10/07/92

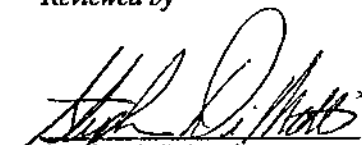
Account: TRI-S Environmental Consulting
Address: P.O. Box 1760
Brattleboro, VT 05302
802-254-3677

Project Manager:
Project Name: State Liquor Store (239) (9-29-92)
Project No.: 239

Lab Sample No.'s:

22735877-001	22735877-002	22735877-003	22735877-004	22735877-005
22735877-006	22735877-007			

Reviewed by


Stephen DiMattei
Quality Assurance Officer

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Lab Certifications

EPA ID: No. MA059
Connecticut: No. PH 0515
Florida: QA Plan No. 900437G
Maine: Reciprocity
Massachusetts: No. 313
New Hampshire: No. 24190-A,B
New York: ELAP No. 11116
Rhode Island: Reciprocity



Matrix Analytical, Inc.
106 South Street
Hopkinton, MA 01748
1 800 3-MATRIX

FINAL REPORT

Client Information

Account: TRI-S Environmental Consulting
Address: P.O. Box 1760
Brattleboro, VT 05302

Project Name: State Liquor Store (239) (9-29-92)
Project Number: 239
Project Manager:
Sampler Name: TRI-S Environmental Consult

Sample Information

Lab ID: 22735877-001
Client Id: SLS-1-92892-239
Matrix: Water

Date Sampled: 09/28/92 06:08
Date Received: 09/29/92 : 0
Date Reported: 10/07/92

Analytical Parameter	Result	Unit	Detection Limit	Method No.	Analyst	Date Analyzed
<u>VOLATILE ORGANICS</u>						
Benzene	ND	ug/l	1	8020	bs	10/03/92
Chlorobenzene	ND	ug/l	1	8020	bs	10/03/92
1,2-Dichlorobenzene	ND	ug/l	1	8020	bs	10/03/92
1,3-Dichlorobenzene	ND	ug/l	1	8020	bs	10/03/92
1,4-Dichlorobenzene	ND	ug/l	1	8020	bs	10/03/92
Ethylbenzene	ND	ug/l	1	8020	bs	10/03/92
MTBE	ND	ug/l	5	8020	bs	10/03/92
Toluene	ND	ug/l	1	8020	bs	10/03/92
Xylene	ND	ug/l	1	8020	bs	10/03/92
<u>SURROGATE STUDIES - VOLATILES</u>						
Bromofluorobenzene (602/8020)	93	Percent			bs	10/03/92

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Matrix Analytical, Inc.
106 South Street
Hopkinton, MA 01748
1 800 3-MATRIX

FINAL REPORT

Client Information

Account: TRI-S Environmental Consulting
Address: P.O. Box 1760
Brattleboro, VT 05302

Project Name: State Liquor Store (239) (9-29-92)
Project Number: 239
Project Manager:
Sampler Name: TRI-S Environmental Consult

Sample Information

Lab ID: 22735877-002
Client Id: SLS-2-92892-239
Matrix: Water

Date Sampled: 09/28/92 05:57
Date Received: 09/29/92 : 0
Date Reported: 10/07/92

Analytical Parameter	Result	Unit	Detection Limit	Method No.	Analyst	Date Analyzed
<u>VOLATILE ORGANICS</u>						
Benzene	ND	ug/l	1	8020	bs	10/03/92
Chlorobenzene	ND	ug/l	1	8020	bs	10/03/92
1,2-Dichlorobenzene	ND	ug/l	1	8020	bs	10/03/92
1,3-Dichlorobenzene	ND	ug/l	1	8020	bs	10/03/92
1,4-Dichlorobenzene	ND	ug/l	1	8020	bs	10/03/92
Ethylbenzene	ND	ug/l	1	8020	bs	10/03/92
MTBE	ND	ug/l	5	8020	bs	10/03/92
Toluene	ND	ug/l	1	8020	bs	10/03/92
Xylene	ND	ug/l	1	8020	bs	10/03/92
<u>HYDROCARBON ANALYSIS</u>						
Total Petroleum Hydrocarbon (IR)	<0.1	mg/l	0.1	418.1	jf	10/02/92
<u>SURROGATE STUDIES - VOLATILES</u>						
Bromofluorobenzene (602/8020)	94	Percent			bs	10/03/92

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Matrix Analytical, Inc.
106 South Street
Hopkinton, MA 01748
1 800 3-MATRIX

FINAL REPORT

Client Information

Account: TRI-S Environmental Consulting
Address: P.O. Box 1760
Brattleboro, VT 05302

Project Name: State Liquor Store (239) (9-29-92)
Project Number: 239
Project Manager:
Sampler Name: TRI-S Environmental Consult

Sample Information

Lab ID: 22735877-003
Client Id: SLS-3-92892-239
Matrix: Water

Date Sampled: 09/28/92 05:45
Date Received: 09/29/92 : 0
Date Reported: 10/07/92

Analytical Parameter	Result	Unit	Detection Limit	Method No.	Analyst	Date Analyzed
<u>VOLATILE ORGANICS</u>						
Benzene	ND	ug/l	1	8020	bs	10/03/92
Chlorobenzene	ND	ug/l	1	8020	bs	10/03/92
1,2-Dichlorobenzene	ND	ug/l	1	8020	bs	10/03/92
1,3-Dichlorobenzene	ND	ug/l	1	8020	bs	10/03/92
1,4-Dichlorobenzene	ND	ug/l	1	8020	bs	10/03/92
Ethylbenzene	ND	ug/l	1	8020	bs	10/03/92
MTBE	ND	ug/l	5	8020	bs	10/03/92
Toluene	ND	ug/l	1	8020	bs	10/03/92
Xylene	ND	ug/l	1	8020	bs	10/03/92
<u>HYDROCARBON ANALYSIS</u>						
Total Petroleum Hydrocarbon (IR)	0.2	mg/l	0.1	418.1	jf	10/02/92
<u>SURROGATE STUDIES - VOLATILES</u>						
Bromofluorobenzene (602/8020)	91	Percent			bs	10/03/92

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Matrix Analytical, Inc.
106 South Street
Hopkinton, MA 01748
1 800 3-MATRIX

FINAL REPORT

Client Information

Account: TRI-S Environmental Consulting
Address: P.O. Box 1760
Brattleboro, VT 05302

Project Name: State Liquor Store (239) (9-29-92)
Project Number: 239
Project Manager:
Sampler Name: TRI-S Environmental Consult

Sample Information

Lab ID: 22735877-004
Client Id: SLS-4-92892-239
Matrix: Water

Date Sampled: 09/28/92 06:13
Date Received: 09/29/92 : 0
Date Reported: 10/07/92

Analytical Parameter	Result	Unit	Detection Limit	Method No.	Analyst	Date Analyzed
<u>VOLATILE ORGANICS</u>						
Benzene	ND	ug/l	1	8020	bs	10/03/92
Chlorobenzene	ND	ug/l	1	8020	bs	10/03/92
1,2-Dichlorobenzene	ND	ug/l	1	8020	bs	10/03/92
1,3-Dichlorobenzene	ND	ug/l	1	8020	bs	10/03/92
1,4-Dichlorobenzene	ND	ug/l	1	8020	bs	10/03/92
Ethylbenzene	ND	ug/l	1	8020	bs	10/03/92
MTBE	ND	ug/l	5	8020	bs	10/03/92
Toluene	ND	ug/l	1	8020	bs	10/03/92
Xylene	ND	ug/l	1	8020	bs	10/03/92
<u>HYDROCARBON ANALYSIS</u>						
Total Petroleum Hydrocarbon (IR)	<0.1	mg/l	0.1	418.1	jt	10/02/92
<u>SURROGATE STUDIES - VOLATILES</u>						
Bromofluorobenzene (602/8020)	96	Percent			bs	10/03/92

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Field Blank



Matrix Analytical, Inc.
106 South Street
Hopkinton, MA 01748
1 800 3-MATRIX

FINAL REPORT

Client Information

Account: TRI-S Environmental Consulting
Address: P.O. Box 1760
Brattleboro, VT 05302

Project Name: State Liquor Store (239) (9-29-92)
Project Number: 239
Project Manager:
Sampler Name: TRI-S Environmental Consult

Sample Information

Lab ID: 22735877-005
Client Id: SLS-5-92892-239
Matrix: Water

Date Sampled: 09/28/92 06:02
Date Received: 09/29/92 : 0
Date Reported: 10/07/92

Analytical Parameter	Result	Unit	Detection Limit	Method No.	Analyst	Date Analyzed
VOLATILE ORGANICS						
Benzene	ND	ug/l	1	8020	bs	10/03/92
Chlorobenzene	ND	ug/l	1	8020	bs	10/03/92
1,2-Dichlorobenzene	ND	ug/l	1	8020	bs	10/03/92
1,3-Dichlorobenzene	ND	ug/l	1	8020	bs	10/03/92
1,4-Dichlorobenzene	ND	ug/l	1	8020	bs	10/03/92
Ethylbenzene	ND	ug/l	1	8020	bs	10/03/92
MTBE	ND	ug/l	5	8020	bs	10/03/92
Toluene	ND	ug/l	1	8020	bs	10/03/92
Xylene	ND	ug/l	1	8020	bs	10/03/92
HYDROCARBON ANALYSIS						
Total Petroleum Hydrocarbon (IR)	<0.1	mg/l	0.1	418.1	jf	10/05/92
SURROGATE STUDIES - VOLATILES						
Bromofluorobenzene (602/8020)	88	Percent			bs	10/03/92

RECEIVED

Dup of SLS-2



Matrix Analytical, Inc.
106 South Street
Hopkinton, MA 01748
1 800 3-MATRIX

FINAL REPORT

Client Information

Account: TRI-S Environmental Consulting
Address: P.O. Box 1760
Brattleboro, VT 05302

Project Name: State Liquor Store (239) (9-29-92)
Project Number: 239
Project Manager:
Sampler Name: TRI-S Environmental Consult

Sample Information

Lab ID: 22735877-006
Client Id: SLS-6-92892-239
Matrix: Water

Date Sampled: 09/28/92 13:20
Date Received: 09/29/92 : 0
Date Reported: 10/07/92

Analytical Parameter	Result	Unit	Detection Limit	Method No.	Analyst	Date Analyzed
VOLATILE ORGANICS						
Benzene	ND	ug/l	1	8020	bs	10/03/92
Chlorobenzene	ND	ug/l	1	8020	bs	10/03/92
1,2-Dichlorobenzene	ND	ug/l	1	8020	bs	10/03/92
1,3-Dichlorobenzene	ND	ug/l	1	8020	bs	10/03/92
1,4-Dichlorobenzene	ND	ug/l	1	8020	bs	10/03/92
Ethylbenzene	ND	ug/l	1	8020	bs	10/03/92
MTBE	ND	ug/l	5	8020	bs	10/03/92
Toluene	ND	ug/l	1	8020	bs	10/03/92
Xylene	ND	ug/l	1	8020	bs	10/03/92
HYDROCARBON ANALYSIS						
Total Petroleum Hydrocarbon (IR)	<0.1	mg/l	0.1	418.1	jf	10/05/92
SURROGATE STUDIES - VOLATILES						
Bromofluorobenzene (602/8020)	94	Percent			bs	10/03/92

RECEIVED 10/14/92

Trip Blank



Matrix Analytical, Inc.
106 South Street
Hopkinton, MA 01748
1 800 3-MATRIX

FINAL REPORT

Client Information

Account: TRI-S Environmental Consulting
Address: P.O. Box 1760
Brattleboro, VT 05302

Project Name: State Liquor Store (239) (9-29-92)
Project Number: 239
Project Manager:
Sampler Name:

Sample Information

Lab ID: 22735877-007
Client Id: QC-Report
Matrix: Water
Comment: Water

Date Sampled: 09/28/92 :
Date Received: 09/29/92 : 0
Date Reported: 10/07/92

Analytical Parameter	Result	Unit	Detection Limit	Method No	Analyst	Date Analyzed
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METHOD BLANK - VOLATILES

Method Blank

ND

ug/l

8020/602

METHOD SUMMARIES

Total petroleum hydrocarbons are performed by Fourier Transform Infrared Spectroscopy (FTIR) using BioRad FTS-7 system. Samples are extracted in freon and subsequently treated with silica gel (to remove vegetable/animal fats) before measurement. 10 and 100 mm sample cells are routinely used to provide necessary detection limits.

Volatile organic analysis is performed using H/P 5995 or 5970 GC/MS, Tekmar purge and trap, and ALS autosampler. Chromatography incorporates packed and megabore columns. Data reduction is performed on RTE 1000 and ChemStation systems. Tuning is based on BFB standards. Procedural guidelines follow EPA 624 or SW846 for all analyses. Aromatic volatiles listed in VOA 8020 are analyzed using GC/MS systems.

METHOD REFERENCES

1. Test Methods For Evaluating Solid Waste: Physical Chemical Methods. EPA SW 846. November 1986.
2. Methods For Chemical Analysis of Water and Wastes. EPA 600/4-79-200. Revised March 1983.
3. Standard Methods For Examination of Water and Wastewater. APHA-AWWA-WACF., 16th Edition. 1985.

CHAIN-OF-CUSTODY RECORD

CLIENT: TRI-S Environmental Consulting
 ADDRESS: PO. Box 1760
 Braintree, VT. 05302
 CLIENT CONTACT PHONE: 254-3677
 PROJECT NAME: State Liquor Store #239
 LAB CONTACT: Susan Donnelly EXT. NO.: 305

CLIENT: <u>KI-3 Environmental Consulting</u>				ANALYSES REQUESTED													TOTALS																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
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CLIENT CONTACT/PHONE: <u>254-3677</u>																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
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LAB CONTACT: <u>Susan Donnelly</u>				EXT. NO.: <u>305</u>																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
LAB ID (LAB USE ONLY)	SAMPLE ID / CLIENT DESCRIPTION			TYPE	COLLECTION DATE / TIME	IMPORTANT - INDICATE THE NUMBER OF BOTTLES PER SAMPLE IN THE SPACES BELOW																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
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*TYPE: W = water; GW = groundwater; DW = drinking water; SW = surface water; S = soil; SED = sediment; SL = sludge; DS = drum sample; O = oil; W1 = wipe; X = other (please describe)

SPECIAL PRICE QUOTE FOR THIS PROJECT
 SPECIAL INSTRUCTIONS / NOTES:

MATRIX ANALYTICAL USE ONLY

Sampler: 1) were shipped / hand-delivered / ambient / chilled
 2) were received preserved / unpreserved
 3) were received intact / broken / leaking
 4) were received within / past holding times
 5) agreed with COC form / discrepancies were present
 6) were sealed / not sealed with COC tape; tape was broken / intact
 7) were in cooler sealed / not sealed with COC tape; tape was broken / intact

NOTES:

REUNQUISHED BY	RECEIVED BY	DATE	TIME	COMMENTS
Kirsten J. J. J.	Donna M. K. K.	9/28/92	AM	
D.M.S	Wm Anderson			
Wm Anderson				

SAMPLER'S INITIALS: K.H.S.

MATRIX ANALYTICAL, INC.
 108 South Street
 Hopkinton, MA 01748
 1 (800) 3-MATRIX

H. Site Health and Safety Plan

SITE SPECIFIC HEALTH AND SAFETY PLAN

FOR

State Liquor Store, Bennington, Vermont

To be used in conjunction with all applicable sections of the Tri-S Programs and Procedures.

A. Site Description

Location: Depot Road, Bennington, Vermont (see map in file)

Special Hazards: N/A

See Section F, Major Contaminants, and Section G, Health and Safety Risks.

B. Objectives

General Summary: This site contains one 500 gallon (UST) which is suspected to be leaking. The tank will be excavated, then removed. If contaminated soil is encountered the contaminated soil will be removed and transported to another location for off site treatment. Transfer and treatment of contaminated soil will be conducted in compliance with all state criteria for off site treatment. If the site is determined to be contaminated and the extent of contamination warrants further action, the following procedures may be necessary:

1. Installation of monitoring wells in order to define the degree and extent of soil and groundwater contamination which may be present at this location.
2. Sampling of groundwater which will be retrieved from the installed monitoring wells.
3. Evaluation of sensitive receptors.
4. Development of a treatment and/or monitor plan for stockpiled soils.
5. Submittal of a summary report.

C. On-Site Organization

Project Team Leader/Tri-S Supervisor: David Gagnon

Site Health & Safety Officer: Paul Miller

Site Representative of Owner: Ms. Betty Riley

State DEC Officer: Lynda Wedderspoon, 244-8702
Charles Schwer

Health and Safety Plan

Other State Representatives: N/A

US EPA Representative: N/A

Other Federal Agency Representatives: N/A

Local Agency Representatives: N/A

D. Emergency Telephone Numbers

Local Police: (802) 442-5464

Local Fire: (802) 442-5555

Local Ambulance: (802) 442-5464

Tri-S Response: (203) 875-2110

State DEC Spills Division: (802) 244-8702

State DEC Hazardous Waste Division: (802) 244-8702

US EPA Region 1: (617) 860-4300

US EPA Hotline (24 hours): (617) 223-7265

National Response Center: 1 (800) 424-8802

Chemtrec: 1 (800) 424-9300

Local Poison Information Center: (802) 658-3456

State Police: (802) 442-5421

Town Manager: (802) 442-1037

Local Hospitals: Southwestern Vermont Medical Center, (802) 442-6361

Other Hospitals in Region: N/A

Health and Safety Plan

Directions to Hospital: Head west on Rt 9 (Main St), left on Dewey St., right on Hospital Drive, follow street to hospital

E. Pertinent Site History

This site contains one 500 gallon underground storage tank (UST) which is suspected to be leaking.

F. Major Contaminants

#2 Home Heating Fuel

G. Health & Safety Risks

The only known or suspected contaminant at this site is gasoline in both the soils and groundwater. Gasoline, primarily used as a fuel for automobiles, is highly flammable and moderately explosive when exposed to heat or flame, and can react vigorously with oxidizing materials. Only foam, CO₂, or dry chemical should be used to fight a gasoline fire.

Symptoms following exposure include the following: prolonged or repeated dermal exposure causes dermatitis and can cause blistering of the skin; oral routes, including inhalation, causes central nervous system depression; severe pneumonitis will result from pulmonary aspiration of gasoline; brief inhalation of high concentrations can cause hyperemia of the conjunctiva and other disorders of the eyes. Should levels of gasoline vapors reach sufficient levels, the vapors will act as an asphyxiant. According to some sources, addiction to gasoline vapors has been noted.

Action Levels: Ambient levels of total organic vapors will be monitored by the Tri-S Health and Safety Officer with a Thermo Environmental Model 508 Organic Vapor Meter capable of detecting organic vapors to 0.1 ppm and measured at the breathing zone. Any detectable levels above 10 ppm will require that Level C protection be utilized.

H. Tri-S Employee Training Assignments

Refer to Tri-S Employee Training Program

Health and Safety Plan

I. Equipment Assignment and Levels of Protection

All personnel will be assigned Level C protection including a half-face respirator with a North 7500-2 yellow organic cartridge should it be required on site. Level D protection will be utilized throughout all drilling operations or when there is potential for exposure to gasoline on site. All Tri-S field personnel have been trained to use Level C protection and will be provided the appropriate equipment. The level of personal protection will be determined by the on-site Tri-S Health and Safety Officer in accordance with Section G, Health and Safety Risks, above.

J. Medical Surveillance

Refer to Medical Surveillance segment of the Tri-S Health and Safety Plan

K. Air Monitoring

Ambient air will be monitored at breathing level with an organic vapor meter (Thermo Environmental Model 508) capable of reading total organic vapors as low as 0.5 ppm.

See Section G for specific air monitoring procedures.

L. Site Control and Security

Only personnel as designated by the Tri-S Health and Safety Officer will be allowed in the work zone. The work Zone will be identified by barricade tape and appropriate signage. An access walkway will be provided through the barricade tape.

M. Decontamination Procedures

Drill rig and augers will be steam-cleaned before and after each soil boring. All wells will be completed and cemented in place at completion of each boring. Any disposable personal protection equipment will be packaged for proper disposal.

N. Site Standard Operating Procedures

All personnel will utilize appropriate and prudent actions during all phases of work.

Health and Safety Plan

O. Contingency Plan

See Tri-S Contingency Plan